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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/718,191

11/20/2003

Hsin-Hui Lee

TS03-179

9793

47390

7590

12/14/2005

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EXAMINER

PHAM, THANHHA S

ART UNIT

PAPER NUMBER

2813

DATE MAILED: 12/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

JK

<b>Office Action Summary</b>	Application No. 10/718,191	Applicant(s) LEE ET AL.	
	Examiner Thanhha Pham	Art Unit 2813	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 26 September 2005.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) 1-13 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 14-25 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

This Office Action is in response to Applicant's Amendment dated 09/26/2005.

### ***Election/Restrictions***

1. This application contains claims 1-13 drawn to an invention nonelected with traverse in Paper dated 06/09/2005. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

### ***Claim Objections***

2. **Claims 14 and 16 are objected to because of informalities. Appropriate correction are required to clarify scope of claims.**

► With respect to claim 14, line 1, typographical error "an integrated circuit" should be changed to "An integrated circuit"

► With respect to claim 16, line 2, "a ball grid array (SBGA) like structure" should be changed to "a ball grid array (SBGA) like structure"

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

**3. Claims 21-25 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.**

In claim 21, term “substantially similar coefficient of thermal expansion” renders the claim indefinite since it is not clear what applicant intends to cover by recitation “**substantially similar**” coefficient of thermal expansion. See MPEP 2173.05(b) for details.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

**4. Claims 14-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Chung et al [US 2002/0056924].**

► With respect to claim 14, Chung et al. (fig. 10, text pages 1-5) discloses an integrated circuit chip package comprising:

an integrated circuit chip (410, text [0061]) attached to a substrate (422);

a stress buffering material (415, text [0061], [0046]-[0048]: *insulation material 415, the same as insulation material 215, being made of epoxy resin is a stress buffering material* ) only covering corners of said integrated circuit chip (210); and

an encapsulation material (430, text [0061], [0017], [0049]: *molding encapsulate 430*) coating said integrated circuit chip and a portion of said substrate.

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► With respect to claims 15-16, Chung et al. (fig. 10, text [0046]) discloses said integrated circuit chip is attached to said substrate by a ball grid array (SBGA).

► With respect to claim 17, Chung et al. (fig. 10) discloses that said encapsulation material (430) covers said stress buffering material (415). Said stress buffering material (415) of Chung et al, the same material as of Applicant's stress buffering material, would prevent delamination of said encapsulation material at said at least one corner of said integrated circuit chip.

► With respect to claim 18, Chung et al. (fig. 10, text [0048]) discloses that said stress buffering material (415) comprises an epoxy or resin.

► With respect to claim 19, Chung et al. (fig. 10, text [0048]) discloses that stress buffering material (415) has the same material as Applicant invention thus the stress buffering material (415) would have the same low coefficient of thermal expansion.

► With respect to claim 20, Chung et al. (fig. 10, text [0050]) discloses that said integrated circuit chip (410) contains low dielectric constant dielectric layers (416, polyimide). Note that polyimide is a low dielectric constant dielectric layer.

**5. Claims 21-24, as best understood, are rejected under 35 U.S.C. 102(b) as being anticipated by Tomoko et al. [JP 06216282A].**

► With respect to claim 21, Tomoko et al. (fig. 1 and the whole document) discloses an integrated circuit chip package comprising:

a die (1);

a stress buffering material (2) having a coefficient of thermal expansion matched with said die, covering at least one corners of said die (1);

an encapsulation material (3) covering said die and said stress buffering material (2).

► With respect to claim 22, Tomoko et al. (fig. 1, text [0014]) discloses that said encapsulation material (3) covers said stress buffering material (2) and wherein said stress buffering material prevents delamination of said encapsulation material at said at least one corner of said integrated circuit chip.

► With respect to claim 23, Tomoko et al. (fig. 1, text [0017]-[0018]) discloses that said stress buffering material (2) comprises resin.

► With respect to claim 24, Tomoko et al. (fig. 1, text [0017]-[0018]) discloses that the stress buffering material (2) has the same material as Applicant invention thus the stress buffering material (2) would have the same low coefficient of thermal expansion.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**6. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tomoko et al. [JP 406216282A] in view of Applicant Admitted Prior Art (figs. 1-3 and page 1).**

Tomoko et al. substantially disclose all the limitations as claimed above except the die contains low dielectric constant dielectric layers. However, Applicant Admitted

Prior Art discloses that low dielectric constant dielectric layer is widely used in the semiconductor art for the die (page 1). Therefore, at the time of the invention, it would have been obvious to one ordinary skill in the art to use the low dielectric constant dielectric layer in the die as taught by Applicant Admitted Prior Art into the device of Tomoko et al. since the low dielectric constant dielectric layer is well known material to use as an insulating layer to prevent short circuit.

### ***Response to Arguments***

Applicant's arguments with respect to claims 14-25 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

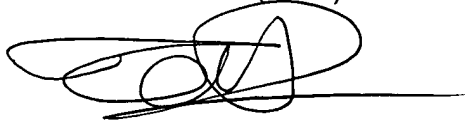
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thanhha Pham whose telephone number is (571) 272-1696. The examiner can normally be reached on Monday and Thursday 9:00AM - 9:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carl Whitehead can be reached on (571) 272-1702. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to be 'Thanhha Pham', with a horizontal line extending to the right.

Thanhha Pham